J. Gair,

Vapor Burner,

No. 99,769, Patented Feb. 15, 1870.

Fig. 1.

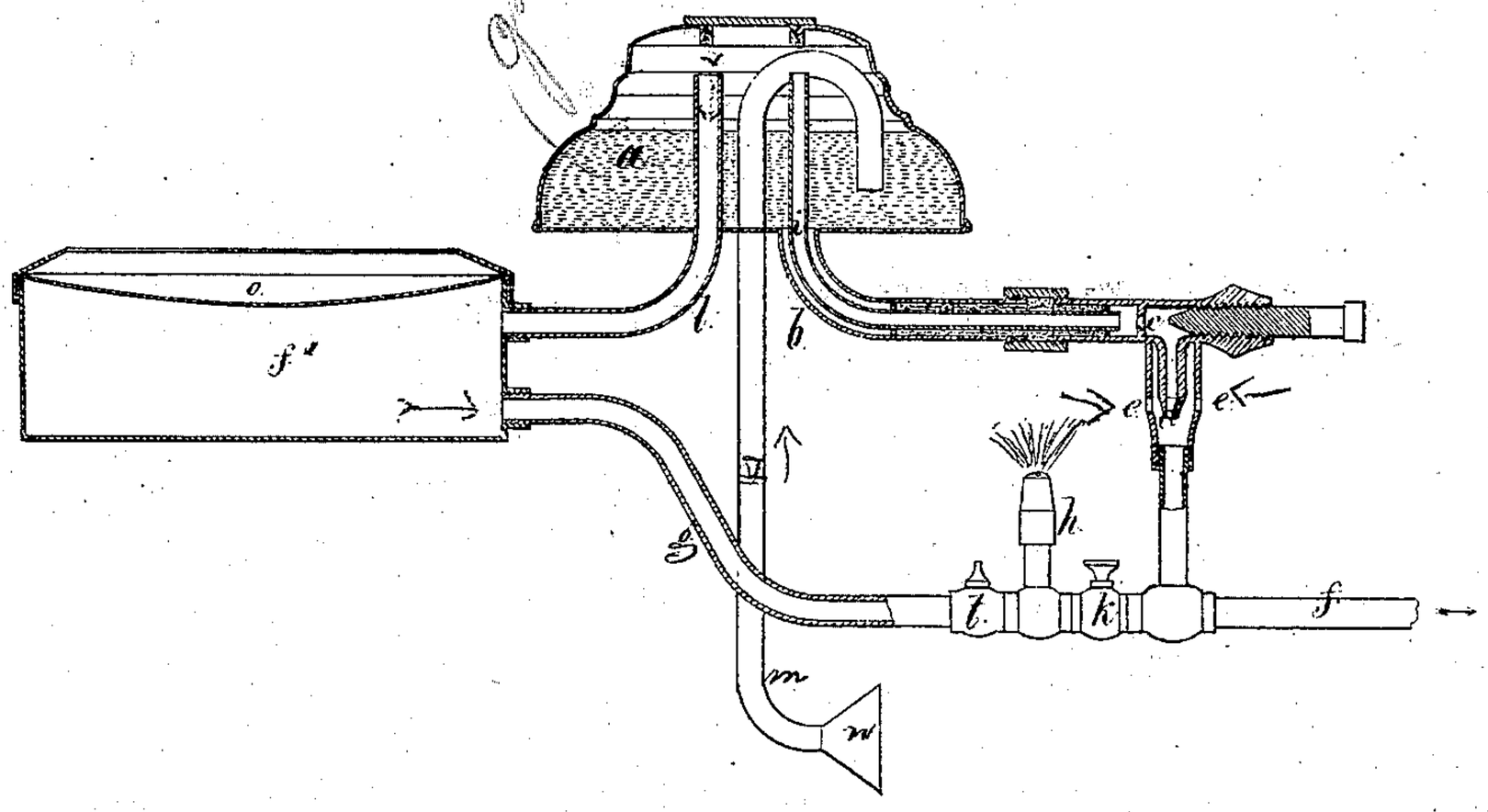
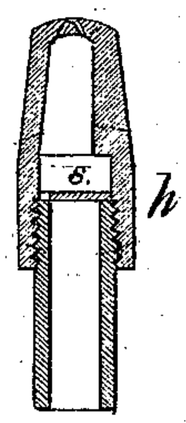


Fig. 2.



Witnesses.

Chas. H. Smith

Geo. D. Walker.

John Gair

United States Patent Office.

JOHN GAIR, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND JOSEPH J. WALTON, OF NEWARK, NEW JERSEY.

Letters Patent No. 99,769, *dated February* 15, 1870.

IMPROVEMENT IN GAS-CARBURETING APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JOHN GAIR, of the city and State of New York, have invented an Improvement in Gas-Carbureting Apparatus, and the following is declared to be a correct description of the same.

This invention relates to that class of gas carbureters in which heated hydro-carbon vapors emerge from a small nozzle, and carry with them a sufficient quantity of air to make the proper admixture in the pipes for burning without smoke.

My invention relates to the use of a vaporizing tube, containing sand or similar porous material, combined with a reservoir containing the liquid hydro-carbon and an injecting nozzle, the parts being arranged in such a manner that the vapor consumed in keeping the apparatus warm is derived from the liquid hydro-carbon in the same manner as the other lights, or by an apparatus that is used to evolve sufficient gas to light the generating burner.

In the drawing—

a is a reservoir to contain gasoline or other liquid hydro-carbon, the same being of any desired size or construction.

b is a tube, leading from the bottom of said reservoir to the valve *c*, that regulates the supply of hydrocarbon vapors to the injector nozzle *d*.

e e are openings that admit air, and *f* is the pipe conveying the vapors to the gas pipes and burners.

In the tube *b* sand or similar porous packing is introduced, in order that the liquid hydro-carbon may be vaporized in passing through said tube in a regular and uniform manner, and without the fluctuations of pressure frequently occurring in apparatus heretofore constructed.

I insert through the sand packing a tube, *i*, so that the pressure may be equalized in the entire apparatus, and hence the light will be more steady than heretofore.

The gas-holding vessel *f'* is employed in starting the apparatus. The tube *g* connects the burner *h* with the same, and the cock *k* connects the burner *h* with the pipe *f*.

A tube, *l*, passes from the vessel *f'* into the top part of the reservoir *a*, and a blow-tube, *m*, passes from a convenient mouth-piece, *n*, below the surface of the liquid in *a*.

The gas-holder *f'* has a flexible diaphragm, *o*, so that this is distended when the tube *m* is blown through from the mouth or otherwise. The tube *m* is to have a cock or self-closing valve, so that the contents of the holder *f'* will not escape except through the tube *g* and the burner. By this means the burner can be started by the action of the mouth, and avoid the separate heating devices heretofore made use of.

After the apparatus has become warmed up, the cock *t* may be closed and the cock *k* opened, so as to take the gas from the pipe *f;* the holder *f'* will, however, still continue to contain gas and act to equalize the pressure, and will supply the gas to the burner whenever it may be started after having been extinguished.

I prefer to make use of a valve, *s*, in the burner *h*, as shown in the enlarged section, fig. 2, said valve preventing the gas flowing too rapidly to said burner, as said valve will rise and partially close the exit to the burner when the pressure becomes too great.

I claim, as my invention—

1. The tube containing a porous packing, through which the tube *i* passes, in combination with the burner *h* and nozzle *d*, substantially as set forth.

2. The gas-holder *f'*, in combination with the blow-tube *m*, reservoir *a*, burner *h*, and packed tube *b*, as and for the purposes set forth.

Dated December 15, 1869.

JOHN GAIR.

Witnesses:

CHAS. H. SMITH,
GEO. T. PINCKNEY.